

Before-, during-, and after-reading strategies

Think back over what have you read in the last 24 hours. Chances are you have read primarily informational text or nonfiction. The same holds true for our students while they are at school, but most reading instruction they receive in language arts classes focuses on fiction. Reading nonfiction requires students to use different techniques to

- navigate multiple starting and stopping points;
- decipher charts, tables, and other graphic elements; and
- be comfortable skipping about and scanning through text.

The following simple and effective strategies can facilitate successful reading in science.

Anticipatory strategy

Word scavenger hunt—Assign students a specific part of the text (a chapter or a couple of pages, depending on the reading level of your class and the complexity of the text). Students, working in pairs, have two minutes to search through the assigned text to find the greatest number of words related to a topic, such as layers of the Earth. One partner scans for related words and calls them out to the other partner, who records them in a notebook. To keep up the pace, and make it less onerous for the partner who might not be an efficient reader, ring a bell every 30 seconds and have students exchange tasks. Give students a warning of 10 seconds remaining, and then another warning to finish the word they are recording. To provide a challenge, before starting the activity tell them that the previous school record was x number of words (it helps if you have done some preparatory work and have an idea of approximately how many words there might be). To do this activity effectively, students have to know the technique of scanning: Moving your eyes quickly down a page looking for specific words, rather than finding meaning.

During-reading strategy

Paired read-aloud—Have students work in pairs to read to each other from an assigned passage in the text. Use a bell to signal when to change readers. This works best in smaller classes, or larger rooms so that students can spread out and hear each other. When students have finished reading, they should take turns sharing what they have read. A variation that we use is to have the student who is

the listener paraphrase what is read, and then take a turn as the reader while the partner listens and paraphrases. Finish this activity by having the groups come together and share their understanding of the key concepts. Our students refer to this as the popcorn activity because the reading pops back and forth between students!

After-reading strategy

5-4-3-2-1 organizer—This five-stage organizer is used to help students focus their reading (Figure 1). To use this strategy, ask students to read through the text and identify

- 5 key ideas,
- 4 facts related to the main idea (remind students that “words” on their own are not facts, and review the difference between facts and opinions),
- 3 new words and their meanings (discuss the use of context in finding definitions),
- 2 facts that they already know (highlights their previous knowledge), and
- 1 question they have not answered by the reading. (The answer to this question should require more than a yes or no answer. The teacher can use the questions to check student comprehension, as extensions, and to identify areas that the teacher may need to revisit.)

Reading is everyone’s responsibility

As classroom teachers, we are sometimes hesitant to add to our already full program by including instruction to help students read science information. We make the assumption that teaching them to read is the language arts teacher’s job. But reading in the science classroom requires a good understanding of new and often complex vocabulary, as well as an understanding of how to read different text forms (graphs, charts, and tables). The inability to read well impairs the student’s ability to understand scientific principles. Finally, consider this: As our focus on literacy in the science classroom took hold, we observed a reduction in the number of behavioral issues with which we were dealing. A classroom with effective readers has many benefits.

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FIGURE 1 The 5-4-3-2-1 organizer

Five key ideas	
1.	
2.	
3.	
4.	
5.	
Four facts related to the main idea	
1.	
2.	
3.	
4.	
Three new words and their meanings	
1.	
2.	
3.	
Two facts you already knew	
1.	
2.	
One question you still have	
1.	

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